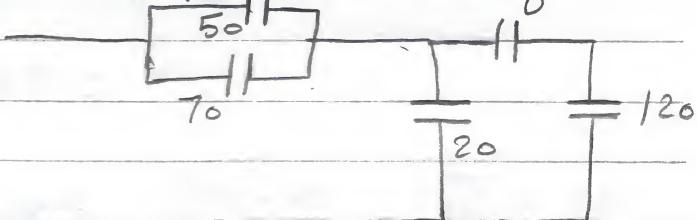


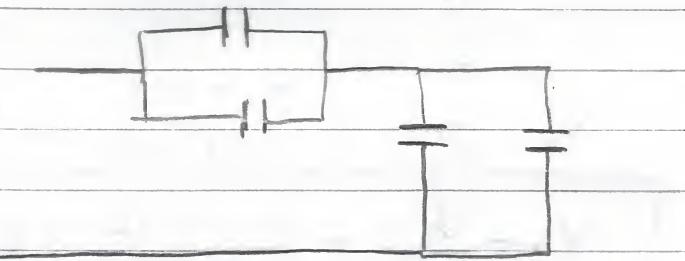
## Section 2

$$\frac{6 \times 120}{6 + 120} = 40 \mu F$$

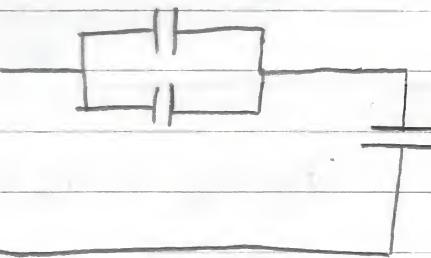
$$R_{eq} = R_1 + R_2 + R_3$$

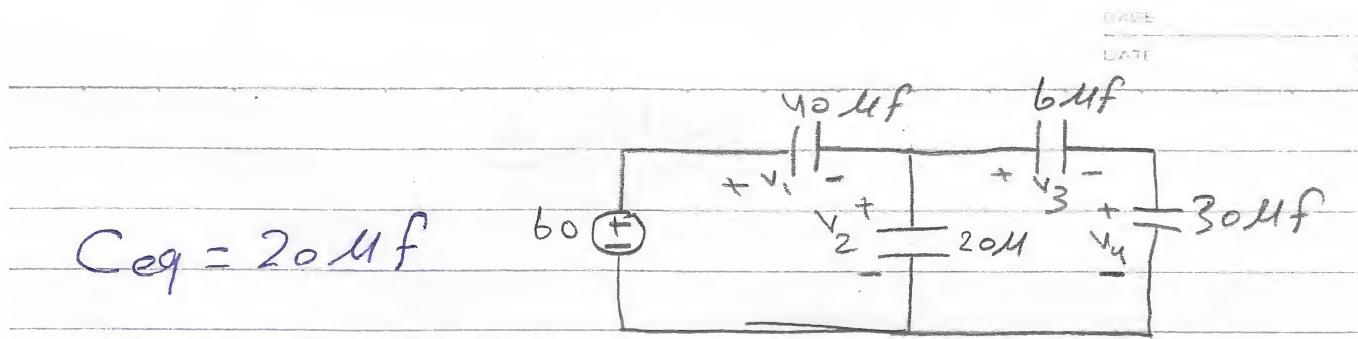


$$20 + 40 = 60 \mu F$$



$$C_{eq} = \frac{120 * 60}{120 + 60} = 40 \mu F$$





$$\text{total charge } \{ Q \} = C_{\text{eq}} V$$

$$= 20 \times 10^{-6} * 60 = 1.2 \text{ mC}$$

$$= 0.0012 \text{ C}$$

$$V_1 = \frac{Q}{C_1} = \frac{0.0012}{40 \times 10^{-6}} = 30 \text{ V}$$

$$V_2 = \frac{Q}{C_2} = \frac{0.0012}{20 \times 10^{-6}} = 15 \text{ V}$$

$$V_3 = \frac{Q}{C_3} = \frac{0.0012}{60 \times 10^{-6}} = 20 \text{ V}$$

$$V_4 = 20$$

$$V_3 C_3 = V_4 C_4$$

$$V_3 * 60 = V_4 * 30$$

$$\frac{V_3}{V_4} = \frac{30}{60} = \frac{1}{2}$$

$$V_4 = 2 V_3$$

$$V_3 + V_4 = V_2$$

$$V_3 + V_4 = 30 \rightarrow ①$$

$$V_3 + 2V_3 = 30$$

$$\underline{V_3 = 10} \rightarrow 2$$

Sub ② in ①

$$V_3 + V_4 = 30 \Rightarrow 10 + V_4 = 30 \Rightarrow \underline{V_4 = 20 \text{ V}}$$